

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraphs from page 13, line 12 through page 15, line 7 with the following amended paragraphs:

Figure 10 shows the various possibility of association to an optical fiber 18 of a GRIN 19A lens or a ball lens 19B, or of leaving the fiber end without lens ~~120 as shown in 20~~. The opposite end of the fiber 18 can be provided with a GRIN lens, or a micro-optical system 22, being it further possible to leave the end without lens as shown in 23. The collection lens 17 is associ-ated to a band-pass optical filter 24.

A step following the integration of front monitoring, “fog” and “dusk” functions through objective and optical fibers, consists in the additional integration of “rain” function. For the latter function imaging optical components are necessary, i.e. lenses and prisms. The field of view of front monitoring function has an optical axis inclined of some degrees downwards. For “dusk”, “rain” and “fog” functions the inclination is of 60 degrees upwards. Actually, for the latter three functions there is a broad tolerance. A variation of 5-6 degrees does not involve any substantial change as far as functionality is concerned. A possible optical solution is to keep matrix plane orthogonal to the optical axis of front monitoring function and, by means of prisms, to change the direction of the optical axis for the other three functions. The tolerance range for orientation enables to select a prism deviating the optical axis of 60° with respect to the perpendicular to image plane (matrix plane). The prism taken into consideration (Littrow prism) is referred to with 20 in Figure 12A and 12B. ~~Figure 11~~ Said figure also shows the shaded area 31 and the end portions of optical fibers 14 and 18 fitted into holes made into the optical window 12.

Figure 13 shows a perspective view of the prism ~~2030~~. Said prism ~~2030~~ is made of glass or transparent plastic, with its face BC covered by a one- or multi-layer coating, so as to obtain a

surface reflecting towards the inside of the prism and absorbing or reflecting to-wards the outside. The triangular faces ABD of the prism ~~2030~~ should be covered with a one- or multi-layer coating, so as to obtain a surface absorbing towards the inside of the prism and absorbing or reflecting to-wards the outside.

The prism ~~2030~~ should be oriented as in Figure 12, with its face AD parallel to sensor plane; the face CD should further not rest on any optical element, for reasons that shall be evident in the following. Before the face AC of the prism ~~2030~~ the imaging objective 15 should be placed, which should have such a rear focal length to be able to focus beyond the prism. The light getting out of the objective strikes the face AC and gets into the prism ~~2030~~; if the angle of incidence onto AC is smaller than a limit angle (which for prism-air passage is of 27.9° with a refractive index of the prism of 1.5), light is reflected wholly onto the face CD; this results in the need for air as optical medium outside the face CD. Eventually, the bundle gets out of the prism 30 through CD towards the sensor.

For the optical insulation of the bundle getting out of the prism ~~2030~~, a rectangular opening having the same surface as the section of the radiation bundle getting out of the prism ~~2030~~ or a larger surface, should be made into the optical protection window 12. The inner wall of the opening should be covered with an absorbing coating, so as to avoid disturbances with the signal of front monitoring function. If necessary, all inner walls can be covered with said coating in case of disturbances with the signals from the optical fibers.